EPA Region 5 Records Ctr.
298223

SITE ASSESSMENT REPORT
FOR
SANDOVAL ZINC
SANDOVAL, MARION COUNTY, ILLINOIS
TDD: S05-9906-008
PAN: 9N0801SIXX

October 21, 1999

Prepared for:
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: T. E. Fitzgerald — Date: 10/21/99
Tracey Fitzgerald, START Project Manager

Reviewed by: [signature] — Date: 10/21/99
Pat Zwilling, START Assistant Program Manager

Approved by: Mary J. Ripp — Date: 10/21/99
Mary Jane Ripp, START Program Manager

ecology and environment, inc.
International Specialists in the Environment
501 W. De Young Center, Building 1, Suite 3
Marion, Illinois 62959
Tel: (618) 998-9237, Fax: (618) 998-1106
recycled paper

Table of Contents

Section		Page
1	Introduction	1-1
2	Site Background	2-1
	2.1 Site Description	2-1
	2.2 Site History	2-2
3	Site Assessment	3-1
4	Analytical Results	4-1
5	Discussion of Potential Threats	5-1
6	Conclusion	6-1

Appendix		Page
A	Photodocumentation	A-1
B	Validated Analytical Results	B-1

List of Figures

Figure		Page
2-1	Site Location Map	2-4
2-2	Site Features Map	2-5
3-1	Soil Sample and XRF Survey Location Map	3-3

List of Tables

Table		Page
3-1	Soil Sample Designations and Analysis Performed	3-2
4-1	Soil Sample Total Metals Analytical Results	4-3
4-2	Soil Sample TCLP Analytical Results	4-4
4-3	XRF Survey Results For Lead and Zinc	4-5

1. Introduction

The United States Environmental Protection Agency (U.S. EPA) tasked the Ecology and Environment, Inc. (E & E), Superfund Technical Assessment and Response Team (START) to perform a site assessment at the Sandoval Zinc site in Sandoval, Illinois. START was requested under Technical Direction Document (TDD) S05-9906-008 to obtain and review background information, conduct a site visit, document site conditions with written and visual documentation, make recommendations to U.S. EPA based on site assessment data collected, determine site characteristics, determine pollutant dispersal pathways, develop a health and safety plan, conduct sampling activities, and perform air monitoring. All site activities were coordinated under the authority of the U.S. EPA On-Scene Coordinators (OSC) Mike Harris and Kevin Turner.

2. Site Background

2.1 Site Description

The Sandoval Zinc site is located east of the Village of Sandoval (latitude 38°30'30" N, longitude 89°05'38" W), approximately 1,440 feet (0.27 miles) east of U.S. Route 51 and 2240 feet (0.42 miles) south of U.S. Route 50 at the eastern end of Smelter Road (a.k.a. Mississippi Avenue) (Figure 2-1). The site consists of 14.16 acres of property located in the southern portion of the SE ¼ of the NE ¼ of Section 17, Township 2 North, Range 1 East, in Marion County, Illinois. The site is bounded to the east by open fields, to the south by open fields, to the west by a vacant parcel of land and to the north by the CSX railroad tracks. Beyond the tracks to the north is an open field, wetlands and Village property currently unimproved. Surface water runoff routes are noticeably present flowing offsite to the drainage ways in the area. Runoff from the site itself follows a radial type pattern due to the site being slightly elevated, due to the former buildings at the site being constructed above grade and waste materials (slag) disposal throughout the property (Figure 2-2). There are two intermittent streams which receive the surface water runoff from the site. The stream to the west is located approximately 300 feet west of the site's property line, collects runoff from the western portion of the site, and flows to the north. The stream located to the east runs through the property, entering approximately 300 feet west of the northeast corner of the site and exists approximately 30 feet north of the southeastern corner of the property. Both intermittent drainage ways empty into Prairie Creek. Prairie Creek is a perennial waterway located approximately 2000 feet south of the southeast corner of the site.

All site buildings have either been removed or were destroyed during a fire in the summer of 1990. There is no site activity and no caretaker or guards on the property. As a result of this, the property has been officially sealed by the Illinois Environmental Protection Agency (Illinois EPA) and a fence has been installed around the perimeter of the site. The site fence has been breached numerous

times, each time Illinois EPA made the necessary repairs to limit access.

2.2 Site History

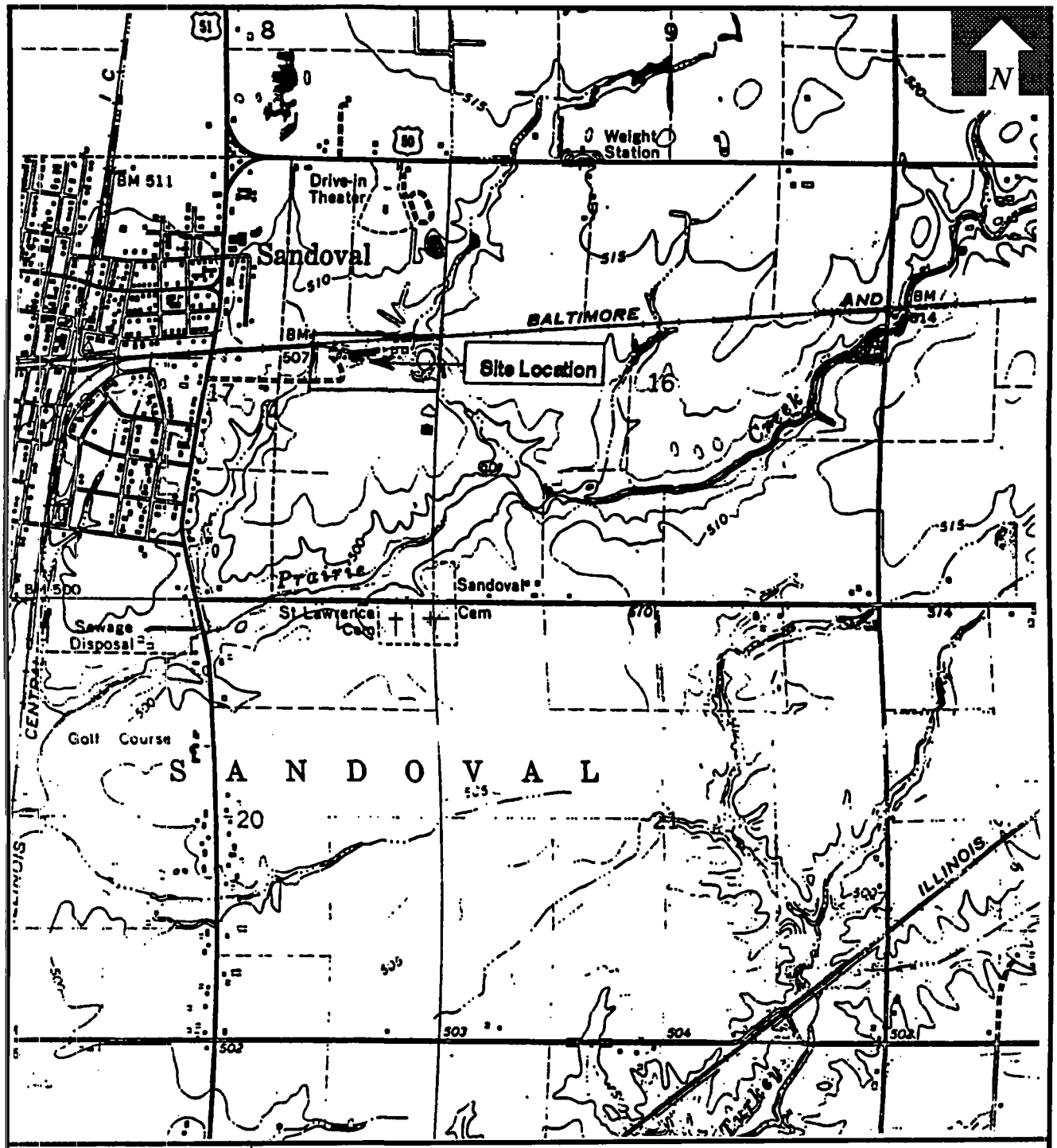
The Sandoval Zinc Company smelter facility began operations as a primary zinc smelter between 1885 and 1890. In approximately 1915, the operations were converted to secondary zinc smelting. Compounds fed into the kilns were pure zinc, zinc oxide, zinc chloride, possibly aluminum chloride and other trace metals. The facility remained a secondary smelter until the facility closed in 1985. On June 27, 1972, the plant was completely destroyed by fire. The buildings were rebuilt and the plant continued operating until 1985. In December 1986, the Sandoval Zinc Company was officially dissolved and the owners declared bankruptcy.

The Sandoval Zinc Company property is currently owned by White Brothers Salvage and Recycling Inc. by warranty deed recorded October 25, 1989. The current owner received the title from Albert F. Haas per warranty deed. Mr. Haas received the title per corporation deed from Sandoval Zinc Company, executed March 14, 1988. Sandoval Zinc Company has been identified as the owner operator of the site during periods when releases occurred.

During the eighty-five years of operation, the principle wastes generated from the plant included metal laden cinders, heavy metals from stack emissions and windblown heavy metals. Large quantities of cinders from the smelting process were used in constructing and surfacing secondary roads in the plant and as fill material on the property. Cinders that were not able to be used at the facility were placed in large piles on the property and offered to the public and township for use in constructing and surfacing roadways, driveways, sidewalks, and parking lots. The slag at the site is reported to be one to ten feet thick over approximately twelve acres of the site. Air emissions from the smelter stacks settled over the site and surrounding area. Aerial photos reveal stresses or lack of vegetation directly to the north and south of the site, potentially to be due to heavy metals that have concentrated from the stack emissions from over the years. In 1987, lawyers for an area farmer contacted Illinois EPA, alleging that crops had been contaminated with lead and zinc from the site. Samples collected by the Illinois Department of Agriculture indicated the presence of zinc in dying plants at 993 parts per million (ppm). Samples collected by Illinois EPA in 1987 of surface water from both of the two drainage ditches revealed that metals were present at levels that exceeded the ambient surface water quality limits set forth in Illinois Administrative Code Title 35, Subtitle C: Water Pollution, Section

304.124. In addition numerous complaints by local residents were made regarding the site's air emissions over the years.

In 1970, in compliance with air pollution regulations, a stack scrubber was installed. Wastewater from the scrubber was pumped to a seepage pit on site which allowed sludge to settle out. The sludge was removed and reprocessed to extract the remaining zinc. The exact location of this and any other pits formerly used at the site is not known.

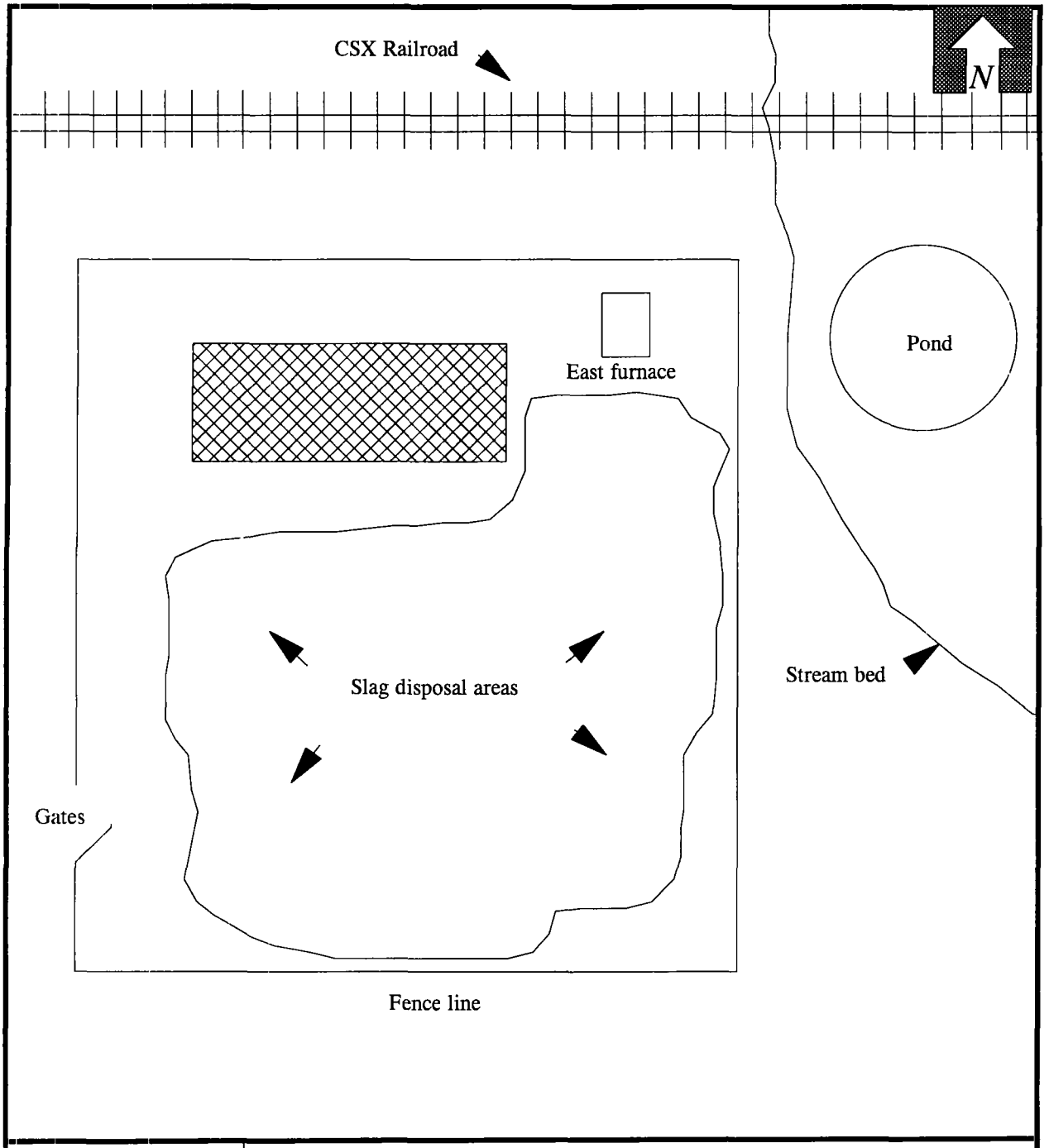


Quadrangle Location

Illinois

ecology and environment, inc.
Region 5 - Superfund Technical Assessment and Response Team
501 W. DeYoung Center, Building 1 Suite 3 Marion, Illinois 62959

TITLE Site Location Map	FIGURE 2-1
SITE Sandoval Zinc	SCALE 1:24,000
CITY Sandoval STATE Illinois	TDD S05-9906-008
SOURCE USGS 7.5 Minute Series, Sandoval, Illinois	DATE 1960; 1965
	REVISED 1971;1973



Legend

Former buildings

ecology and environment, inc.
Region 5 - Superfund Technical Assessment and Response Team
501 W. DeYoung Center, Building 1 Suite 3 Marion, Illinois 62959

TITLE Site Features Map			FIGURE 2-2
SITE Sandoval Zinc			SCALE Not to scale
CITY Sandoval	STATE Illinois		TDD S05-9906-008
SOURCE Ecology and Environment Inc.			DATE September 1999

3. Site Assessment

On August 11 and 12, 1999, U.S. EPA OSCs Kevin Turner and Mike Harris, and START members Brendan McLennan and Tracey Fitzgerald met at the site to conduct an assessment. START collected surface soil samples and samples at depth, performed photodocumentation of sample locations, and used an X-ray fluorescence (XRF) metal detector to determine the concentration of metals present at several locations of the site. Sample locations were determined based on present site conditions and former data collected by the Illinois EPA, as detailed in the Illinois EPA CERCLA Expanded Site Inspection Report, dated September 1997.

Soil sample locations were numbered and flagged for sampling by START Fitzgerald, while START McLennan marked the XRF sample locations and collecting data from the surface soil and slag (Figure 3-1). Once all surficial metal samples were collected, a gas powered auger was advanced to a depth of three feet at each location, except for location XRF-1 which was advanced to a depth of five feet to determine the total extent of slag in that location. Samples collected at depth included volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), Resource Conservation and Recovery Act (RCRA) and toxicity characteristic leaching procedure (TCLP) metals. Five of the six samples collected at depth were collected at surficial sample locations. The other sample at depth was collected south of two concrete tank cradles present on the former building's concrete floor. The sample was collected after investigating the area and discovering that the staining present at the surface had a fuel odor. This sample was collected using a hand auger in order to transfer the sample material into the jars as soon as possible, minimizing the sample's exposure to air (Table 3-1).

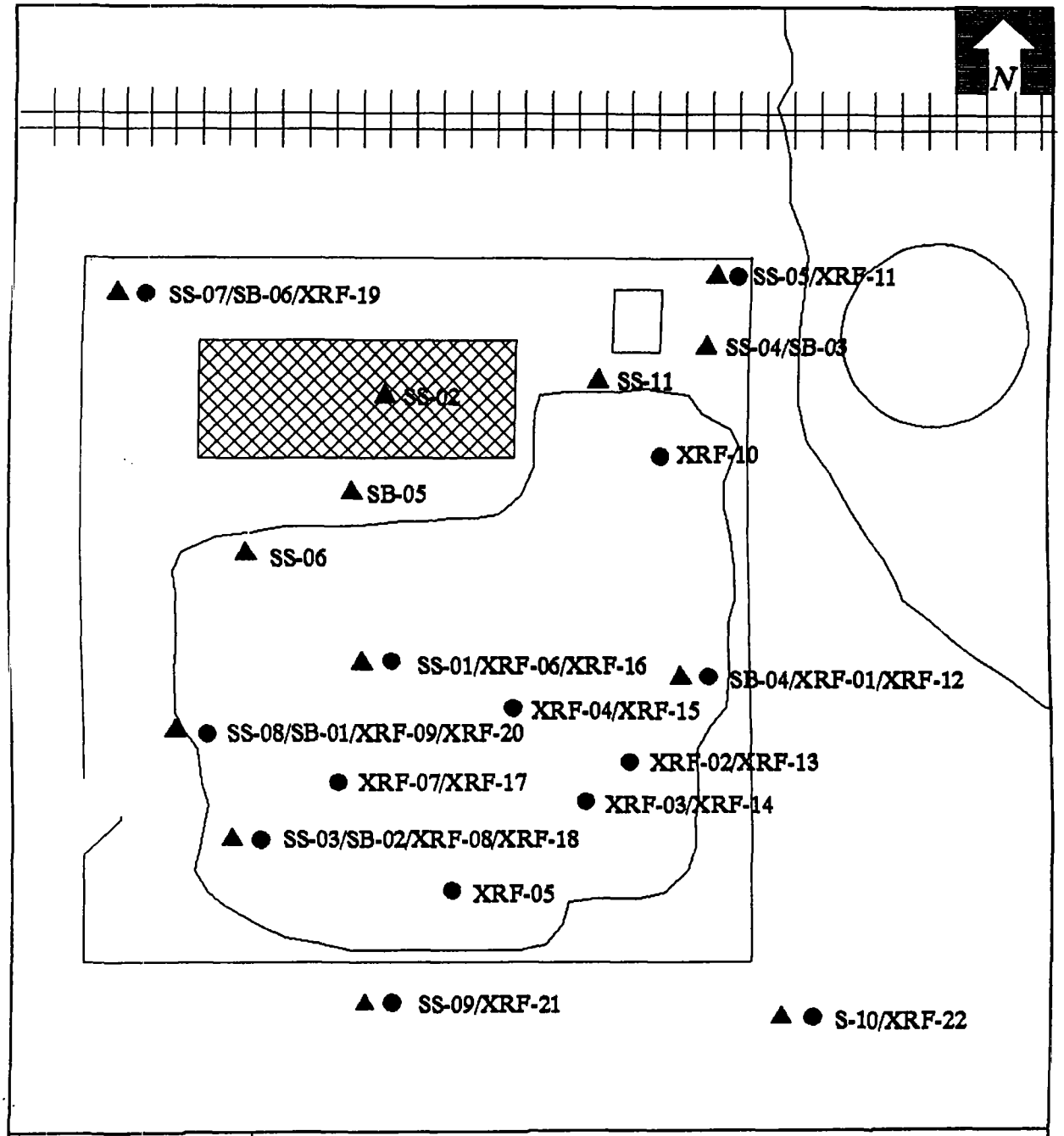
Table 3-1

SOIL SAMPLE DESIGNATIONS AND ANALYSIS PERFORMED
SANDOVAL ZINC
SANDOVAL, MARION COUNTY, ILLINOIS
AUGUST 11-12, 1999

Sample	Sample Depth	Analysis Performed	Description
SS-01	Surface	RCRA metals, TCLP metals	South of former building where slag has been disposed of in the past.
SS-02	Surface	RCRA metals, TCLP metals	Former railroad tracks through building.
SS-03	Surface	RCRA metals, TCLP metals	Highest metal concentrations in Illinois EPA Site Inspection Report.
SS-04	Surface	RCRA metals, TCLP metals	East furnace slag pile under concrete structure.
SS-05	Surface	RCRA metals, TCLP metals	Northeast corner of property in surface water runoff area.
SS-06	Surface	RCRA metals, TCLP metals	Southwest corner of former building, white substance present at surface.
SS-07	Surface	RCRA metals, TCLP metals	West side of property, area is void of any vegetation.
SS-08	Surface	RCRA metals, TCLP metals	Northwest corner of the site adjacent to former railroad tracks.
SS-09	Surface	RCRA metals, TCLP metals	Outside of chain link fence to the south of the center of the former building.
SS-10	Surface	RCRA metals, TCLP metals	Outside the fence by monitor well near the southwest corner of the property.
SS-11	Surface	RCRA metals, TCLP metals	In slag pile located at the east side of the former building.
SB-01	Four feet	VOCs, SVOCs, RCRA metals, TCLP metals	At surface sample SS-08 west side of the facility void of vegetation.
SB-02	Four feet	VOCs, SVOCs, RCRA metals, TCLP metals	At surface sample SS-03 in area of highest metal concentrations.
SB-03	Four feet	VOCs, SVOCs, RCRA metals, TCLP metals	South of surface sample SS-04 in depression void of vegetation.
SB-04	Six feet	VOCs, SVOCs, RCRA metals, TCLP metals	XRF-1 location, elevated zinc and lead metal readings in scan of soil.
SB-05	One foot six inches	VOCs, SVOCs, RCRA metals, TCLP metals	South of former tank cradles in stained soil with fuel odor present.
SB-06	Four feet	VOCs, SVOCs, RCRA metals, TCLP metals	At surface sample SS-07 north of former railroad tracks.

Key : RCRA = Resource Conservation and Recovery Act.
TCLP = Toxicity characteristic leaching procedure
XRF = Spectrace 9000 metal concentration detector.
VOCs = Volatile organic compounds.
SVOC = Semivoliatile organic compounds.

Source : START Fitzgerald site logbook.



Legend	ecology and environment, inc. Region 5 - Superfund Technical Assessment and Response Team 501 W. DeYoung Center, Building 1 Suite 3 Marion, Illinois 62959	
▲ Soil sample locations	TITLE Soil Sample and XRF Survey Location Map	FIGURE 3-1
	SITE Sandoval Zinc	SCALE Not to scale
● Spectrace 9000 survey location	CITY Sandoval STATE Illinois	TDD S05-9906-008
	SOURCE Ecology and Environment Inc.	DATE September 1999

4. Analytical Results

All samples were sent to CT & E Environmental Services Ludington, Michigan under TDD S05-9906-808. Surface samples were analyzed for RCRA and TCLP metals, and subsurface samples were analyzed for VOCs, SVOCs, RCRA metals and TCLP metals. No sample results above the detection limits were found for any VOC or SVOC samples.

Elevated RCRA metals were detected in several site samples indicative of the slag produced from processing ore and other materials in a smelting operation since the turn of the century. Lead was very prevalent throughout the site with the maximum being reported for sample SS-06 at a concentration of 20,000 milligrams per kilogram (mg/kg) (Table 4-1). The TCLP metal results were elevated as well. Eight of the eleven surface soil samples exceeded the RCRA D008 regulatory limit for lead of 5.0 milligram per liter (mg/L). Two of the three that didn't exceed the characteristic hazardous waste criteria were collected outside the fence put in place by Illinois EPA in a field to the south of the facility, leaving only sample SS-03 that was under the D008 criteria. Sample SS-03 was collected in the area where the Illinois EPA had obtained their highest lead levels during their site assessment. The TCLP lead concentration at this location was reported at 4.2 mg/L. Only sample SB-01 was reported below the RCRA D008 limit in the six soil borings collected. This sample was collected at surface sample SS-08 location at the west side of the facility in an area void of vegetation. Sample SB-05 had the highest concentration of 59 mg/L (Table 4-2).

Twenty-two separate surveys utilizing a Spectrace 9000 instrument were conducted around the Sandoval Zinc site (Table 4-3). Locations were selected based on a review of previous work performed at the site by Illinois EPA, and areas where raw materials and waste slag were designated as being stored or disposed of at the site. Twelve surveys were performed at the surface. One survey was performed on cuttings from five feet in depth, while the remaining nine surveys were performed on cuttings from three feet. The surveys indicate wide spread contamination of metals present at the site, consistent with the site conditions. Metal concentrations did decline significantly in the seven

borings that had surveys performed at the surface and an additional survey of cuttings at depth.

Table 4-1

SOIL SAMPLE RCRA TOTAL METALS ANALYTICAL RESULTS
SANDOVAL ZINC
SANDOVAL , MARION COUNTY, ILLINOIS
AUGUST 11-12, 1999

Parameter	Sample Description (units = mg/kg)																
	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	SS-11	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06
Arsenic	33	22	26	6.6	13	29	40	13	ND	1.7	58	ND	3.4	2.5	ND	17	27
Barium	180	46	180	70	89	180	100	340	86	150	180	180	180	120	48	110	220
Cadmium	16	42	67	5.9	16	39	19	7.3	0.71	0.95	30	1.5	9.4	24	0.35	12	9.8
Chromium	37	69	26	98	24	45	60	22	19	21	18	13	12	14	13	67	18
Lead	6,400	7,200	8,400	1,300	3,400	20,000	6,300	2,800	120	200	11,000	4,000	1,100	6,500	250	5,200	2,900
Mercury	5.6	2.5	5.2	0.13	0.4	3.0	5.6	8.9	0.037	0.035	0.35	0.56	0.92	0.25	0.39	0.13	2.3
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.8	ND	ND	ND	ND
Silver	3.4	5.2	2.6	3.2	3.9	3.0	5.1	2.3	1.1	1.2	6.9	0.81	0.98	1.9	0.52	7	3.1

Key : mg/kg = Milligrams per kilogram.
ND = Non detect.
RCRA = Resource Conservation and Recovery Act.

Source: CT&E Environmental Services Inc. Ludington, Michigan, analytical TDD S05-9906-808.

Table 4-2

SOIL SAMPLE TCLP ANALYTICAL RESULTS
SANDOVAL ZINC
SANDOVAL, MARION COUNTY, ILLINOIS
AUGUST 11 - 12, 1999

Parameter	Sample Designation (units = mg/L)																
	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	SS-11	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.033	ND	ND	ND	ND	0.021	ND
Barium	0.35	0.48	0.23	0.28	0.59	0.29	0.31	0.76	0.73	0.98	1.1	1.4	0.63	1.0	0.34	0.66	0.79
Cadmium	0.34	0.20	0.83	0.12	0.23	0.28	0.14	0.16	0.022	0.012	0.15	0.028	0.36	1.5	0.029	0.24	0.18
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	27	6.4	4.2	5.8	11	7	11	12	0.35	0.26	52	0.50	13	35	14	59	17
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	0.059	0.041	0.064	0.020	ND	0.048	0.041	0.041	0.039	0.032	0.042	ND	0.032	ND	0.038	0.063	0.025
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Key : TCLP = Toxicity characteristic leaching procedure.
ND = Non detect.
mg/L = Milligrams per liter.

Source: CT&E Environmental Services Inc. Ludington, Michigan, analytical TDD S05-9906-808.

Table 4-3

XRF SURVEY RESULTS FOR LEAD AND ZINC
SANDOVAL ZINC
SANDOVAL, MARION COUNTY, ILLINOIS
AUGUST 11 - 12, 1999

XRF Designation	Sample Designation	Depth of Survey	Zinc Concentration (ppm)	Lead Concentration (ppm)
X-01	No surface soil sample collected	Surface	125,400	10,780
X-02	No soil samples collected	Surface	65,530	4,044
X-03	No soil samples collected	Surface	100,730	978
X-04	No soil samples collected	Surface	98,410	7,793
X-05	No soil samples collected	Surface	92,920	3,104
X-06	SS-01	Surface	81,570	3,397
X-07	No soil samples collected	Surface	139,830	3,977
X-08	SS-03	Surface	46,530	3,227
X-09	SS-08	Surface	15,160	1,037
X-10	No soil samples collected	Surface	58,620	4,160
X-11	SS-05	Surface	50,310	3,094
X-12	SB-04 and X-01	Five feet	12,550	783
X-13	X-02	Three feet	13,400	824
X-14	X-03	Three feet	8,747	228

Table 4-3 cont.

XRF SURVEY RESULTS FOR LEAD AND ZINC
SANDOVAL ZINC
SANDOVAL, MARION COUNTY, ILLINOIS
AUGUST 11 - 12, 1999

XRF Designation	Sample Designation	Depth of Survey	Zinc Concentration (ppm)	Lead Concentration (ppm)
X-15	X-04	Three feet	16,000	822
X-16	SS-01	Three feet	3,501	92.3
X-17	X-07	Three feet	22,400	1,420
X-18	SS-03	Three feet	5,316	519
X-19	SS-07	Three feet	16,510	2,103
X-20	SS-08	Surface	36,510	4,650
X-21	SS-09	Three feet	1,132	26.2
X-22	SS-10	Three feet	740	10.4

Key : XRF = Spectrace 9000 metal concentration detector.
SS-01 = Surface soil sample designation.
SB-04 = Soil boring sample designation.
ppm = Parts per million.

Source : START McLennan site logbook.

5. Discussion of Potential Threats

Section 300.415, paragraph (b)(2) of the National Contingency Plan (NCP) lists factors to be considered when determining the appropriateness of a potential removal action at a site. Specifically, the following is a discussion of the applicable conditions which exist at the Sandoval Zinc site.

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.** Heavy metals were found at the site and at depth throughout the site. In particular, lead has been documented as being present at levels ten times the TCLP regulatory limit for D008 hazardous waste. Sandoval Zinc Company is located just at the edge of town and is routinely used as a recreational area for off road vehicles. Small children were seen riding a minibike outside the fenced area, and have previously ridden throughout the site, prior to the fence.

- **Actual or potential contamination of drinking water supplies or sensitive ecosystems.** Surface water runoff exits the site in multiple locations and enters streams which contain sensitive ecosystems. Sampling conducted by Illinois EPA found lead and zinc at concentrations that exceeded the Severe Effect Level. This level indicates pronounced disturbances of the sediment-dwelling community which can be expected. These sediment concentrations would be detrimental to the majority of benthic species. The Illinois EPA has documented heavy metals present in the pond onsite, which may be used for fishing and swimming by local residents. The pond is not limited in access by the fence installed at the site.

- **High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface that may migrate.** Hazardous levels of heavy metals in the soil on site and in the surface water drainage areas leading offsite indicate that contaminants may be migrating off the property. The Illinois EPA Expanded Site Investigation conducted in 1996 documented that both lead and zinc exceeded the Illinois Tiered Approach to Cleanup Objectives (TACO) residential and industrial/commercial cleanup objectives. Heavy rains may cause further migration of contaminants. Winds could cause dust particulates containing heavy metals to migrate offsite.

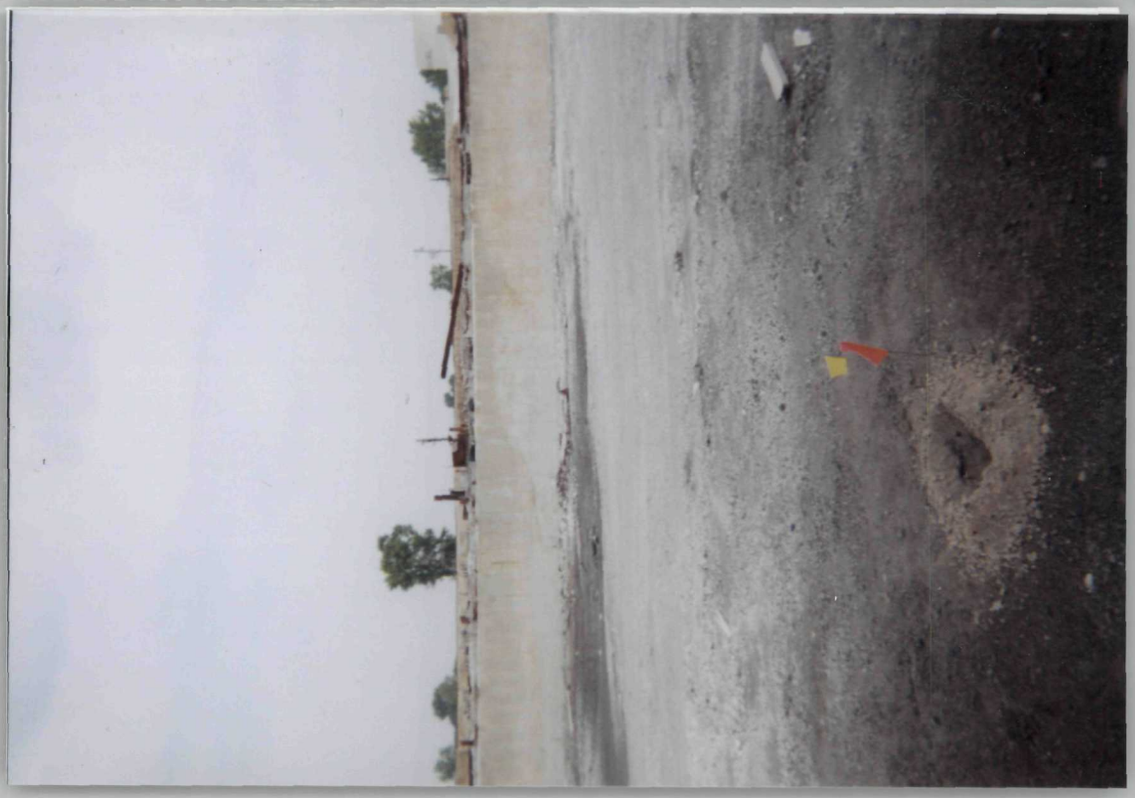
- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.** As stated above, rainwater could cause contaminated soil and slag to migrate. Winds can cause dust particulates to migrate.

6. Conclusion

A site assessment was performed at the Sandoval Zinc site on August 11 and 12, 1999. Based on results of samples collected at the site, high levels of heavy metals indicate a hazard to human health and the environment. These results would warrant a removal action to eliminate these threats.

Appendix A

Photodocumentation



SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** North **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-01 located in slag, former building to the north.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** South **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-02 located along former railroad tracks between former buildings.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** Southwest **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-03 near the highest lead concentration in the Illinois EPA site investigation.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** West **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-04 located at the east furnace slag pile under former building.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** East **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-05 located at the northeast corner of the property, a surface water runoff pathway.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** Southwest **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-06 southwest from corner of the former building, white material at surface.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** West **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-07 located just north of former railroad tracks at the northwest corner of site.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** West **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-08 at the west side of the facility in an area void of vegetation.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** North **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-09 located south of the temporary fence installed at the site.

SITE: Sandoval Zinc **DATE:** 8/11/99
LOCATION: Sandoval, Illinois **DIRECTION:** Northwest **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-10 located at the southeast corner of the site.

SITE: Sandoval Zinc **DATE:** 8/12/99
LOCATION: Sandoval, Illinois **DIRECTION:** West **PHOTOGRAPHER:** T.E. Fitzgerald
SUBJECT: Surface soil sample SS-11 collected at the east end of former building, in slag throughout the area.

Appendix B

Validated Analytical Results

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: September 20, 1999

TO: Tracey Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Marcia Meredith Galloway, Chief Chemist, E & E, Buffalo, New York

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Inorganic Data Quality Review for RCRA Metals and Toxicity Characteristic Leaching Procedure (TCLP) RCRA Metals, Sandoval Zinc, Sandoval, Marion County, Illinois.

REFERENCE: Project TDD S05-9906-008 Analytical TDD S05-9906-808
Project PAN 9N0801SIXX Analytical PAN 9NAH01TAXX

The data quality assurance (QA) review of seventeen soil samples collected from the Sandoval Zinc site is complete. The samples were collected on August 11 and 12, 1999 by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to CT &E Environmental Services, Ludington, MI for analyses. The laboratory analyses were performed according to the U.S. EPA Solid Waste 846 Methods 1311 for TCLP, 7471 for mercury and 6010 for all other metals.

Sample Identification

START Identification No.	Laboratory Identification No.
SS-01 / - TCLP	391327001 / - 3913270018
SS-02 / - TCLP	391327002 / - 3913270019
SS-03 / - TCLP	391327003 / - 3913270020
SS-04 / - TCLP	391327004 / - 3913270021
SS-05 / - TCLP	391327005 / - 3913270022
SS-06 / - TCLP	391327006 / - 3913270023
SS-07 / - TCLP	391327007 / - 3913270024
SS-08 / - TCLP	391327008 / - 3913270025
SS-09 / - TCLP	391327009 / - 3913270026
SS-10 / - TCLP	391327010 / - 3913270027
SS-11 / - TCLP	391327011 / - 3913270028
SB-01 / - TCLP	391327012 / - 3913270029
SB-02 / - TCLP	391327013 / - 3913270030
SB-03 / - TCLP	391327014 / - 3913270031
SB-04 / - TCLP	391327015 / - 3913270032
SB-05 / - TCLP	391327016 / - 3913270033
SB-06 / - TCLP	391327017 / - 3913270034

recycled paper

II. Gas Chromatography/Mass Spectrometry (GC/MS) Tuning: Acceptable

GC/MS tuning to meet ion abundance criteria using decaflurotriphenylphosphine (DFTPP) were acceptable and samples were analyzed within 12 hours of DFTPP tuning.

III. Calibrations:

• Initial Calibration: Acceptable

A five-point initial calibration was performed prior to analysis. All target compounds had a relative response factor of at least 0.05. The percent %RSDs between response factors were less than 30% for all detected target compounds.

• Continuing Calibration: Acceptable

The percent differences of the response factors were less than or equal to 25%, as required for detected target compounds except for one compound. All method criteria were met and no compounds were detected in the samples.

IV. Blank: Acceptable

A method blank was analyzed with the samples. No target compounds were detected in the blank above the limit of quantitation.

V. Internal Standards: Acceptable

The areas of the internal standards in the samples were within -50% to +100% of the associated calibration check standard. The retention times of the internal standards were within the 30-second control limit.

VI. Compound Identification: Acceptable

The sample chromatograms confirmed that no target compounds were detected.

VII. Additional Quality Control: Acceptable

The laboratory control sample (LCS) and surrogate recoveries were acceptable for all samples.

VIII. Overall Assessment of Data for Use: Qualified

The overall usefulness of the data is based on criteria for QA Level II as outlined in the OSWER Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 4.0, BNAs by GC/MS Analysis. Based upon the information provided, the data are acceptable for use. However, the laboratory performed dilutions on several of the samples resulting in significantly elevated detection limits. The samples include SB-0, SB-05, and SB-06. Although the results were non-detect, the comparability of the data to regulatory limits should be done with caution to account for the elevated detection limit. The chromatograms showed no significant matrix at the dilutions which were run and no apparent clean-up procedures were attempted.

Data Qualifiers and Definition:

U - The material was analyzed for, but not detected. The reporting limit is adjusted based on blank contamination.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: September 20, 1999

TO: Tracey Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Marcia Meredith Galloway, Chief Chemist, E & E, Buffalo, New York

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Organic Data Quality Review for Semivolatiles, Sandoval Zinc, Sandoval, Marion County, Illinois.

REFERENCE: Project TDD S05-9906-008 Analytical TDD S05-9906-808
Project PAN 9N0801SIXX Analytical PAN 9NAH01TAXX

The data quality assurance (QA) review of six soil samples collected from the Sandoval Zinc site is complete. The samples were collected on August 12, 1999 by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to CT &E Environmental Services, Ludington, MI for analyses. The laboratory analyses were performed according to the U.S. EPA Solid Waste 846 Method 8270 for semivolatiles.

Sample Identification

START Identification No.	Laboratory Identification No.
SB-01	391327012
SB-02	391327013
SB-03	391327014
SB-04	391327015
SB-05	391327016
SB-06	391327017

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on August 12, 1999, extracted on August 15, 1999, and analyzed on August 18 and 19, 1999. This is within the 14-day holding time limit, from collection to extraction, and 40-day limit from extraction to analysis.

recycled paper

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on August 11 and 12, 1999, and analyzed on August 17 and 18, 1999. This is within the six month holding time limit (28 days for mercury, 14 for TCLP).

II. Calibration:

- Initial Calibration: Acceptable

  Recoveries for the initial calibration verification were within 90 to 110% (80 to 120% for mercury), as required.

- Continuing Calibration: Acceptable

  Recoveries for analytes in the continuing calibration verification standard were within 90 to 110% (80 to 120% for mercury), as required.

III. Blanks: Qualified

Preparation blanks were analyzed with each analytical batch. No target analytes were detected in the blanks above the reporting limit except for arsenic and barium in the TCLP method blank. The results for arsenic for samples SS-11 and SB-05 for TCLP are flagged "U" as non-detect. The adjusted reporting limit is greater than 10-fold below the TCLP regulatory limit and there is no impact on data usability. At least one blank was analyzed for each 20 samples.

IV. Interference Check Samples (ICSs): Qualified

ICSs were analyzed and recoveries were within 20% of the mean value, as required except for arsenic in the soils and arsenic and barium in the TCLP samples. The recoveries of these metals were greater than 20% of the mean value, but less than 50% of the mean value. Therefore, all positive results are flagged "J" as estimated. The ICS was only analyzed at the beginning of the analysis as required by SW-846.

V. Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 3.0, Metallic Inorganic Parameters. Based upon the information provided, the data are acceptable for use with the above stated qualifications.

Data Qualifiers and Definition

J - The associated numerical value is an estimated quantity because the reported concentrations were less than the required detection limits or quality control criteria were not met.

U - The material was analyzed for, but not detected. The reporting limit is adjusted based on blank contamination.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: September 20, 1999

TO: Tracey Fitzgerald, START Project Manager, E & E, Marion, Illinois

FROM: Marcia Meredith Galloway, Chief Chemist, E & E, Buffalo, New York

THROUGH: Dave Hendren, START Analytical Services Manager, E & E, Chicago, Illinois

SUBJECT: Organic Data Quality Review for Volatiles, Sandoval Zinc, Sandoval, Marion County, Illinois.

REFERENCE: Project TDD S05-9906-008 Analytical TDD S05-9906-808
Project PAN 9N0801SIXX Analytical PAN 9NAH01TAXX

The data quality assurance (QA) review of six soil samples collected from the Sandoval Zinc site is complete. The samples were collected on August 12, 1999 by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to CT &E Environmental Services, Ludington, MI for analyses. The laboratory analyses were performed according to the U.S. EPA Solid Waste 846 Method 8260B for volatiles.

Sample Identification

START Identification No.	Laboratory Identification No.
SB-01	391327012
SB-02	391327013
SB-03	391327014
SB-04	391327015
SB-05	391327016
SB-06	391327017

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on August 12, 1999, and analyzed on August 17, 1999. This is within the 14-day holding time limit.

recycled paper

II. Gas Chromatography/Mass Spectrometry (GC/MS) Tuning: Acceptable

GC/MS tuning to meet ion abundance criteria using bromofluorobenzene (BFB) were acceptable and samples were analyzed within 12 hours of BFB tuning.

III. Calibrations:

• Initial Calibration: Acceptable (see note)

A five-point initial calibration was performed prior to analysis. All average response factors were greater than or equal to 0.05. The percent relative standard deviations (%RSDs) between response factors were less than 30% for all detected target compounds except for chloromethane. Chloromethane was qualified as non-detect based on the method blank as described below.

• Continuing Calibration: Acceptable

The percent differences of the response factors were less than 25%, as required for detected target compounds except for a few compounds particularly the gases. All method criteria were met and no compounds were detected in the samples.

IV. Blank: Qualified

A method blank was analyzed with the samples. No target compounds or contaminants were detected in the blank above the limit of quantitation, except for chloromethane. Chloromethane is considered a laboratory artifact from the methanol used to prepare the samples. The results for samples SB-02 are qualified "U" as non-detect at an elevated detection limit.

V. Internal Standards: Acceptable

The areas of the internal standards in the samples were within -50% to +100% of the associated calibration check standard. The retention times of the internal standards were within the 30-second control limit.

VI. Compound Identification: Acceptable

The sample mass spectrum and retention time match the standard.

VII. Additional Quality Control: Acceptable

The laboratory control sample (LCS) and surrogate recoveries were acceptable for all samples.

VII. Overall Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990), Data Validation Procedures, Section 5.0, VOAs By GC/MS analysis. Based upon the information provided, the data are acceptable for use with the above-stated qualifications. The laboratory before the volatile analysis using a methanol extraction resulting in slightly elevated detection limits.

Data Qualifiers and Definition:

U - The material was analyzed for, but not detected. The reporting limit is adjusted based on blank contamination.

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327001	**Matrix:**	Solid
Client Sample ID:	SS-01	**Location:**	S. of former bldg
Collected:	8/11/99 12:45:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	33	mg/Kg	0.9	SW846-6010	8/17/99 15:58	8/18/99 11:02	JAC
Barium	180	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 11:02	JAC
Cadmium	16	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 11:02	JAC
Chromium	37	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 11:02	JAC
Lead	6400 D	mg/Kg	2	SW846-6010	8/17/99 15:58	8/19/99 16:02	JAC
Mercury	5.6 D	mg/Kg	1.1	SW846-7471	8/19/99 15:52	8/19/99 8:55	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 11:02	JAC
Silver	3.4	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 11:02	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	90.4	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327002	**Matrix:**	Solid
Client Sample ID:	SS-02	**Location:**	RR track bet bldgs
Collected:	8/11/99 12:45:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	22	mg/Kg	0.9	SW846-6010	8/17/99 15:58	8/18/99 11:22	JAC
Barium	46	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 11:22	JAC
Cadmium	42	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 11:22	JAC
Chromium	69	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 11:22	JAC
Lead	7200 D	mg/Kg	2	SW846-6010	8/17/99 15:58	8/19/99 16:07	JAC
Mercury	2.5 D	mg/Kg	0.47	SW846-7471	8/19/99 15:52	8/19/99 8:56	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 11:22	JAC
Silver	5.2	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 11:22	JAC
PHYSICAL PROPERTY ANALYSIS							
T Solids	85.9	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327003	**Matrix:**	Solid
Client Sample ID:	SS-03	**Location:**	high conc. area
Collected:	8/11/99 12:57:00PM	**Project:**	9906-808
Received:	8/14/99 8:22:46AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	26	mg/Kg	1	SW846-6010	8/17/99 15:58	8/18/99 11:33	JAC
Barium	180	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 11:33	JAC
Cadmium	67	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 11:33	JAC
Chromium	26	mg/Kg	3	SW846-6010	8/17/99 15:58	8/18/99 11:33	JAC
Lead	8400 D	mg/Kg	3	SW846-6010	8/17/99 15:58	8/19/99 16:12	JAC
Mercury	5.2 D	mg/Kg	0.64	SW846-7471	8/19/99 15:52	8/19/99 8:56	SM
Selenium	ND D,M	mg/Kg	10	SW846-6010	8/17/99 15:58	8/19/99 16:12	JAC
Silver	2.6	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 11:33	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	77.8	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327004	**Matrix:**	Solid
Client Sample ID:	SS-04	**Location:**	high conc. area
Collected:	8/11/99 1:10:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	6.6 J	mg/Kg	1	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
Barium	70	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
Cadmium	5.9	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
Chromium	98	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
Lead	1300	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
Mercury	0.13	mg/Kg	0.022	SW846-7471	8/19/99 15:52	8/19/99 8:57	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
Silver	3.2	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 11:39	JAC
PHYSICAL PROPERTY ANALYSIS							
T Solids	89.4	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327005	**Matrix:**	Solid
Client Sample ID:	SS-05	**Location:**	NE corner, runoff
Collected:	8/11/99 1:30:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	13	mg/Kg	1	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
Barium	89	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
Cadmium	16	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
Chromium	24	mg/Kg	3	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
Lead	3400	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
Mercury	0.40	mg/Kg	0.026	SW846-7471	8/19/99 15:52	8/19/99 8:57	SM
Selenium	ND	mg/Kg	4	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
Silver	3.9	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 11:45	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	78.3	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327006	**Matrix:**	Solid
Client Sample ID:	SS-06	**Location:**	white mat. SW
Collected:	8/11/99 1:45:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	29 J	mg/Kg	1	SW846-6010	8/17/99 15:58	8/18/99 11:50	JAC
Barium	180	mg/Kg	0.6	SW846-6010	8/17/99 15:58	8/18/99 11:50	JAC
Cadmium	39	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 11:50	JAC
Chromium	45	mg/Kg	3	SW846-6010	8/17/99 15:58	8/18/99 11:50	JAC
Lead	20000 D	mg/Kg	6	SW846-6010	8/17/99 15:58	8/19/99 16:22	JAC
Mercury	3.0 D	mg/Kg	0.55	SW846-7471	8/19/99 15:52	8/19/99 8:58	SM
Selenium	ND D,M	mg/Kg	20	SW846-6010	8/17/99 15:58	8/19/99 16:22	JAC
Silver	3.0	mg/Kg	0.06	SW846-6010	8/17/99 15:58	8/18/99 11:50	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	72.9	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Qualifiers
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327007	**Matrix:**	Solid
Client Sample ID:	SS-07	**Location:**	NW corner, N of RR
Collected:	8/11/99 2:05:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	40	mg/Kg	1	SW846-6010	8/17/99 15:58	8/18/99 12:52	JAC
Barium	100	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 12:52	JAC
Cadmium	19	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 12:52	JAC
Chromium	60	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 12:52	JAC
Lead	6300 D	mg/Kg	2	SW846-6010	8/17/99 15:58	8/19/99 16:27	JAC
Mercury	5.6 D	mg/Kg	0.60	SW846-7471	8/19/99 15:52	8/19/99 8:58	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 12:52	JAC
Silver	5.1	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 12:52	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	83.7	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327008	**Matrix:**	Solid
Client Sample ID:	SS-08	**Location:**	W side in stressed
Collected:	8/11/99 2:15:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	13 J	mg/Kg	1	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
Barium	340	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
Cadmium	7.3	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
Chromium	22	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
Lead	2800	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
Mercury	8.9 D	mg/Kg	1.3	SW846-7471	8/19/99 15:52	8/19/99 8:59	SM
Selenium	ND M	mg/Kg	4	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
Silver	2.3	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 12:57	JAC
PHYSICAL PROPERTY ANALYSIS							
T Solids	78.7	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327009	**Matrix:**	Solid
Client Sample ID:	SS-09	**Location:**	S fence offsite
Collected:	8/11/99 2:25:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	ND M	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
Barium	86	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
Cadmium	0.71	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
Chromium	19	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
Lead	120	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
Mercury	0.037	mg/Kg	0.023	SW846-7471	8/19/99 15:52	8/19/99 9:00	SM
Selenium	ND	mg/Kg	4	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
Silver	1.1	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 13:03	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	87.8	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327010	**Matrix:**	Solid
Client Sample ID:	SS-10	**Location:**	SE offsite by old MW
Collected:	8/11/99 2:35:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	1.7 J	mg/Kg	0.8	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
Barium	150	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
Cadmium	0.95	mg/Kg	0.08	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
Chromium	21	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
Lead	200	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
Mercury	0.035	mg/Kg	0.021	SW846-7471	8/19/99 15:52	8/19/99 9:03	SM
Selenium	ND M	mg/Kg	6	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
Silver	1.2	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 13:09	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	93.5	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327011	**Matrix:**	Solid
Client Sample ID:	SS-11	**Location:**	E end Bldg slag pile
Collected:	8/12/99 3:10:00PM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	58	mg/Kg	0.9	SW846-6010	8/17/99 15:58	8/18/99 13:14	JAC
Barium	180	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 13:14	JAC
Cadmium	30	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 13:14	JAC
Chromium	18	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:14	JAC
Lead	11000 D	mg/Kg	5	SW846-6010	8/17/99 15:58	8/19/99 17:16	JAC
Mercury	0.35	mg/Kg	0.023	SW846-7471	8/19/99 15:52	8/19/99 9:03	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:14	JAC
Silver	6.9	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 13:14	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	88.5	%		SM18 2540G		8/18/99 11:18	JL

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327012	**Matrix:**	Solid
Client Sample ID:	SB-01	**Location:**	SS-08 @ 4'-0"
Collected:	8/12/99 8:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	ND	mg/Kg	0.9	SW846-6010	8/17/99 15:58	8/18/99 13:20	JAC
Barium	180	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 13:20	JAC
Cadmium	1.5	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 13:20	JAC
Chromium	13	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:20	JAC
Lead	400	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 13:20	JAC
Mercury	0.56	mg/Kg	0.024	SW846-7471	8/19/99 15:52	8/19/99 9:03	SM
Selenium	ND D,M	mg/Kg	9	SW846-6010	8/17/99 15:58	8/19/99 17:21	JAC
Silver	0.81	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 13:20	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	82.8	%		SM18 2540G		8/18/99 11:18	JL
GC/MS VOLATILE ORGANIC							
1,1,1-Trichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
1,1,2,2-Tetrachloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
1,1,2-Trichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
1,1-Dichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
1,1-Dichloroethylene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
1,2-Dichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
1,2-Dichloropropane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
2-Butanone (M E K)	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
2-Hexanone	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Acetone	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Benzene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Bromodichloromethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Bromoform	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Bromomethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Carbon disulfide	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Carbon tetrachloride	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Chlorobenzene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Chloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS

Reported: 8/20/1999

Ecology and Environment, Inc.

Sample ID:	3991327012	**Matrix:**	Solid
Client Sample ID:	SB-01	**Location:**	SS-08 @ 4'-0"
Collected:	8/12/99 8:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS VOLATILE ORGANIC							
Chloroform	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Chloromethane	110 B	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
cis-1,2-Dichloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
cis-1,3-Dichloropropene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Dibromochloromethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Ethylbenzene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Methylene chloride	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
o-Xylene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
P & M -Xylene	ND	ug/kg	60	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Styrene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Tetrachloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
T[illegible]ne	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
tra[illegible]1,2-Dichloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
trans-1,3-Dichloropropene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Trichloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
Vinyl chloride	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 8:15	8/17/99 17:01	JDS
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
1,2,4-Trichlorobenzene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
1,2-Dichlorobenzene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
1,3-Dichlorobenzene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
1,4-Dichlorobenzene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,4,5-Trichlorophenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,4,6-Trichlorophenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,4-Dichlorophenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,4-Dimethylphenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,4-Dinitrophenol	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,4-Dinitrotoluene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2,6-Dinitrotoluene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2-Chloronaphthalene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2-Chlorophenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2-Methyl naphthalene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2-Methyl-4,6-dinitrophenol	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327012	**Matrix:**	Solid
Client Sample ID:	SB-01	**Location:**	SS-08 @ 4'-0"
Collected:	8/12/99 8:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
2-Methylphenol (o-Cresol)	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2-Nitroaniline	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
2-Nitrophenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
3&4-Methylphenol (p&m-Cresol)	ND D	ug/kg	2000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
3,3-Dichlorobenzidine	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
3-Nitroaniline	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
4-Bromophenyl-phenylether	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
4-Chloro-3-methylphenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
4-Chloroaniline	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
4-Chlorophenyl-phenylether	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
4-Nitroaniline	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
4-Nitrophenol	ND D	ug/kg	4000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Acenaphthene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Acenaphthylene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Anthracene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Benzo(a)anthracene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Benzo[a]pyrene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Benzo[b]fluoranthene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Benzo[g,h,i]perylene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Benzo[k]fluoranthene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Bis(2-Chloroethoxy)methane	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Bis(2-Chloroethyl)ether	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
bis(2-chloroisopropyl)ether	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
bis(2-Ethylhexyl)phthalate	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Butylbenzylphthalate	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Carbazole	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Chrysene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Di-n-butylphthalate	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
di-n-Octylphthalate	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Dibenzo[a,h]anthracene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Dibenzofuran	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Diethylphthalate	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Dimethylphthalate	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327012	**Matrix:**	Solid
Client Sample ID:	SB-01	**Location:**	SS-08 @ 4'-0"
Collected:	8/12/99 8:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
Fluoranthene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Fluorene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Hexachlorobenzene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Hexachlorobutadiene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Hexachlorocyclopentadiene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Hexachloroethane	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Indeno[1,2,3-c,d] pyrene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Isophorone	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
N-Nitroso-di-n-propylamine	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
N-Nitrosodiphenylamine	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Naphthalene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
N[illegible]enzene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Pe[illegible]chlorophenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Phenanthrene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Phenol	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS
Pyrene	ND D	ug/kg	1000	SW846-8270	8/15/99 18:01	8/18/99 14:49	JLS

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327013	**Matrix:**	Solid
Client Sample ID:	SB-02	**Location:**	SS-03 @ 4'-0"
Collected:	8/12/99 8:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	3.4 J	mg/Kg	0.8	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
Barium	180	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
Cadmium	9.4	mg/Kg	0.08	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
Chromium	12	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
Lead	1100	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
Mercury	0.92 D	mg/Kg	0.12	SW846-7471	8/19/99 15:52	8/19/99 9:04	SM
Selenium	1.8 J	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
Silver	0.98	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 13:25	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	82.1	%		SM18 2540G		8/18/99 11:18	JL
GC/MS VOLATILE ORGANIC							
1,1,1-Trichloroethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
1,1,2,2-Tetrachloroethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
1,1,2-Trichloroethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
1,1-Dichloroethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
1,1-Dichloroethylene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
1,2-Dichloroethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
1,2-Dichloropropane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
2-Butanone (M E K)	ND	ug/kg	310	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
2-Hexanone	ND	ug/kg	310	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	310	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Acetone	ND	ug/kg	310	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Benzene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Bromodichloromethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Bromoform	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Bromomethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Carbon disulfide	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Carbon tetrachloride	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Chlorobenzene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Chloroethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327013	**Matrix:**	Solid
Client Sample ID:	SB-02	**Location:**	SS-03 @ 4'-0"
Collected:	8/12/99 8:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS VOLATILE ORGANIC							
Chloroform	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Chloromethane	44	ug/kg	44	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
cis-1,2-Dichloroethene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
cis-1,3-Dichloropropene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Dibromochloromethane	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Ethylbenzene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Methylene chloride	ND	ug/kg	310	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
o-Xylene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
P & M -Xylene	ND	ug/kg	61	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Styrene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Tetrachloroethene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Toluene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
trans-1,2-Dichloroethene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
trans-1,3-Dichloropropene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Trichloroethene	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
Vinyl chloride	ND	ug/kg	31	SW846-8260 Methanol Pr	8/12/99 8:40	8/17/99 17:41	JDS
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
1,2,4-Trichlorobenzene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
1,2-Dichlorobenzene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
1,3-Dichlorobenzene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
1,4-Dichlorobenzene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,4,5-Trichlorophenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,4,6-Trichlorophenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,4-Dichlorophenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,4-Dimethylphenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,4-Dinitrophenol	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,4-Dinitrotoluene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2,6-Dinitrotoluene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2-Chloronaphthalene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2-Chlorophenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2-Methyl naphthalene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2-Methyl-4,6-dinitrophenol	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327013	**Matrix:**	Solid
Client Sample ID:	SB-02	**Location:**	SS-03 @ 4'-0"
Collected:	8/12/99 8:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
2-Methylphenol (o-Cresol)	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2-Nitroaniline	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
2-Nitrophenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
3&4-Methylphenol (p&m-Cresol)	ND	ug/kg	400	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
3,3-Dichlorobenzidine	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
3-Nitroaniline	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
4-Bromophenyl-phenylether	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
4-Chloro-3-methylphenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
4-Chloroaniline	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
4-Chlorophenyl-phenylether	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
4-Nitroaniline	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
4-[illegible]phenol	ND	ug/kg	820	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Acenaphthene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Acenaphthylene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Anthracene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Benzo(a)anthracene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Benzo[a]pyrene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Benzo[b]fluoranthene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Benzo[g,h,i]perylene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Benzo[k]fluoranthene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Bis(2-Chloroethoxy)methane	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Bis(2-Chloroethyl)ether	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
bis(2-chloroisopropyl)ether	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
bis(2-Ethylhexyl)phthalate	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Butylbenzylphthalate	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Carbazole	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Chrysene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Di-n-butylphthalate	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
di-n-Octylphthalate	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Dibenzo[a,h]anthracene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Dibenzofuran	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Diethylphthalate	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Dimethylphthalate	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327013	**Matrix:**	Solid
Client Sample ID:	SB-02	**Location:**	SS-03 @ 4'-0"
Collected:	8/12/99 8:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
Fluoranthene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Fluorene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Hexachlorobenzene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Hexachlorobutadiene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Hexachlorocyclopentadiene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Hexachloroethane	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Indeno[1,2,3-c,d] pyrene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Isophorone	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
N-Nitroso-d -n-propylamine	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
N-Nitrosodiphenylamine	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Naphthalene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
N[illegible]benzene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Pentachlorophenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Phenanthrene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Phenol	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS
Pyrene	ND	ug/kg	210	SW846-8270	8/15/99 18:01	8/18/99 15:33	JLS

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Ecology and Environment, Inc.

Sample ID:	3991327014	**Matrix:**	Solid
Client Sample ID:	SB-03	**Location:**	SS-04 @ 4'-0"
Collected:	8/12/99 9:00:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	2.5	mg/Kg	0.9	SW846-6010	8/17/99 15:58	8/18/99 13:31	JAC
Barium	120	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 13:31	JAC
Cadmium	24	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 13:31	JAC
Chromium	14	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:31	JAC
Lead	6500 D	mg/Kg	2	SW846-6010	8/17/99 15:58	8/19/99 17:31	JAC
Mercury	0.25	mg/Kg	0.026	SW846-7471	8/19/99 15:52	8/19/99 9:07	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:31	JAC
Silver	1.9	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 13:31	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	77.5	%		SM18 2540G		8/18/99 11:18	JL
GC/MS VOLATILE ORGANIC							
1,1,1-Trichloroethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
1,1,2,2-Tetrachloroethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
1,1,2-Trichloroethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
1,1-Dichloroethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
1,1-Dichloroethylene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
1,2-Dichloroethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
1,2-Dichloropropane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
2-Butanone (M E K)	ND	ug/kg	330	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
2-Hexanone	ND	ug/kg	330	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	330	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Acetone	ND	ug/kg	330	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Benzene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Bromodichloromethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Bromoform	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Bromomethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Carbon disulfide	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Carbon tetrachloride	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Chlorobenzene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Chloroethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS

Reported: 8/20/1999

Qualifiers:

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327014	**Matrix:**	Solid
Client Sample ID:	SB-03	**Location:**	SS-04 @ 4'-0"
Collected:	8/12/99 9:00:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS VOLATILE ORGANIC							
Chloroform	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Chloromethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
cis-1,2-Dichloroethene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
cis-1,3-Dichloropropene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Dibromochloromethane	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Ethylbenzene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Methylene chloride	ND	ug/kg	330	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
o-Xylene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
P & M -Xylene	ND	ug/kg	66	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Styrene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Tetrachloroethene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
T[illegible]ne	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
trans-1,2-Dichloroethene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
trans-1,3-Dichloropropene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Trichloroethene	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
Vinyl chloride	ND	ug/kg	33	SW846-8260 Methanol Pr	8/12/99 9:00	8/17/99 18:21	JDS
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
1,2,4-Trichlorobenzene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
1,2-Dichlorobenzene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
1,3-Dichlorobenzene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
1,4-Dichlorobenzene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,4,5-Trichlorophenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,4,6-Trichlorophenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,4-Dichlorophenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,4-Dimethylphenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,4-Dinitrophenol	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,4-Dinitrotoluene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2,6-Dinitrotoluene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2-Chloronaphthalene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2-Chlorophenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2-Methyl naphthalene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2-Methyl-4,6-dinitrophenol	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327014	**Matrix:**	Solid
Client Sample ID:	SB-03	**Location:**	SS-04 @ 4'-0"
Collected:	8/12/99 9:00:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
2-Methylphenol (o-Cresol)	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2-Nitroaniline	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
2-Nitrophenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
3&4-Methylphenol (p&m-Cresol)	ND	ug/kg	430	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
3,3-Dichlorobenzidine	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
3-Nitroaniline	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
4-Bromophenyl-phenylether	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
4-Chloro-3-methylphenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
4-Chloroaniline	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
4-Chlorophenyl-phenylether	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
4-Nitroaniline	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
4-[illegible]phenol	ND	ug/kg	860	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Acenaphthene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Acenaphthylene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Anthracene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Benzo(a)anthracene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Benzo[a]pyrene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Benzo[b]fluoranthene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Benzo[g,h,i]perylene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Benzo[k]fluoranthene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Bis(2-Chloroethoxy)methane	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Bis(2-Chloroethyl)ether	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
bis(2-chloroisopropyl)ether	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
bis(2-Ethylhexyl)phthalate	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Butylbenzylphthalate	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Carbazole	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Chrysene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Di-n-butylphthalate	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
di-n-Octylphthalate	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Dibenzo[a,h]anthracene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Dibenzofuran	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Diethylphthalate	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Dimethylphthalate	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327014	**Matrix:**	Solid
Client Sample ID:	SB-03	**Location:**	SS-04 @ 4'-0"
Collected:	8/12/99 9:00:00AM	**Project:**	9906-808
Received:	8/13/99 8:22:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
Fluoranthene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Fluorene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Hexachlorobenzene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Hexachlorobutadiene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Hexachlorocyclopentadiene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Hexachloroethane	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Indeno[1,2,3-c,d] pyrene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Isophorone	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
N-Nitroso-di-n-propylamine	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
N-Nitrosodiphenylamine	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Naphthalene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
N[illegible]enzene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Pentachlorophenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Phenanthrene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Phenol	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS
Pyrene	ND	ug/kg	220	SW846-8270	8/15/99 18:01	8/18/99 16:18	JLS

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327015	**Matrix:**	Solid
Client Sample ID:	SB-04	**Location:**	XRF X-1 loc. 7'-0"
Collected:	8/12/99 10:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	ND D,M	mg/Kg	10	SW846-6010	8/17/99 15:58	8/19/99 17:36	JAC
Barium	48	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 13:37	JAC
Cadmium	0.35	mg/Kg	0.1	SW846-6010	8/17/99 15:58	8/18/99 13:37	JAC
Chromium	13	mg/Kg	3	SW846-6010	8/17/99 15:58	8/18/99 13:37	JAC
Lead	250	mg/Kg	0.5	SW846-6010	8/17/99 15:58	8/18/99 13:37	JAC
Mercury	0.39	mg/Kg	0.024	SW846-7471	8/19/99 15:52	8/19/99 9:07	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:37	JAC
Silver	0.52	mg/Kg	0.05	SW846-6010	8/17/99 15:58	8/18/99 13:37	JAC
PHYSICAL PROPERTY ANALYSIS							
T Solids	84.9	%		SM18 2540G		8/18/99 11:18	JL
GC/MS VOLATILE ORGANIC							
1,1,1-Trichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
1,1,2,2-Tetrachloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
1,1,2-Trichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
1,1-Dichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
1,1-Dichloroethylene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
1,2-Dichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
1,2-Dichloropropane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
2-Butanone (M E K)	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
2-Hexanone	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Acetone	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Benzene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Bromodichloromethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Bromoform	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Bromomethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Carbon disulfide	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Carbon tetrachloride	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Chlorobenzene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Chloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327015	**Matrix:**	Solid
Client Sample ID:	SB-04	**Location:**	XRF X-1 loc. 7'-0"
Collected:	8/12/99 10:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS VOLATILE ORGANIC							
Chloroform	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Chloromethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
cis-1,2-Dichloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
cis-1,3-Dichloropropene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Dibromochloromethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Ethylbenzene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Methylene chloride	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
o-Xylene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
P & M -Xylene	ND	ug/kg	58	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Styrene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Tet[illegible]loroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
To[illegible]e	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
trans-1,2-Dichloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
trans-1,3-Dichloropropene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Trichloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
Vinyl chloride	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:15	8/17/99 19:01	JDS
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
1,2,4-Trichlorobenzene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
1,2-Dichlorobenzene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
1,3-Dichlorobenzene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
1,4-Dichlorobenzene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,4,5-Trichlorophenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,4,6-Trichlorophenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,4-Dichlorophenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,4-Dimethylphenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,4-Dinitrophenol	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,4-Dinitrotoluene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2,6-Dinitrotoluene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2-Chloronaphthalene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2-Chlorophenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2-Methyl naphthalene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2-Methyl-4,6-dinitrophenol	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327015	**Matrix:**	Solid
Client Sample ID:	SB-04	**Location:**	XRF X-1 loc. 7'-0"
Collected:	8/12/99 10:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
2-Methylphenol (o-Cresol)	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2-Nitroaniline	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
2-Nitrophenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
3&4-Methylphenol (p&m-Cresol)	ND	ug/kg	390	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
3,3-Dichlorobenzidine	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
3-Nitroaniline	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
4-Bromophenyl-phenylether	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
4-Chloro-3-methylphenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
4-Chloroaniline	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
4-Chlorophenyl-phenylether	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
4-Nitroaniline	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
4-Nitrophenol	ND	ug/kg	790	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Acenaphthene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Acenaphthylene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Anthracene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Benzo(a)anthracene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Benzo[a]pyrene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Benzo[b]fluoranthene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Benzo[g,h,i]perylene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Benzo[k]fluoranthene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Bis(2-Chloroethoxy)methane	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Bis(2-Chloroethyl)ether	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
bis(2-chloroisopropyl)ether	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
bis(2-Ethylhexyl)phthalate	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Butylbenzylphthalate	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Carbazole	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Chrysene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Di-n-butylphthalate	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
di-n-Octylphthalate	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Dibenzo[a,h]anthracene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Dibenzofuran	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Diethylphthalate	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Dimethylphthalate	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327015	**Matrix:**	Solid
Client Sample ID:	SB-04	**Location:**	XRF X-1 loc. 7'-0"
Collected:	8/12/99 10:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
Fluoranthene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Fluorene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Hexachlorobenzene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Hexachlorobutadiene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Hexachlorocyclopentadiene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Hexachloroethane	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Indeno[1,2,3-c,d] pyrene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Isophorone	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
N-Nitroso-di-n-propylamine	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
N-Nitrosodiphenylamine	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Naphthalene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Nitrobenzene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Pentachlorophenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Phenanthrene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Phenol	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS
Pyrene	ND	ug/kg	200	SW846-8270	8/15/99 18:01	8/18/99 17:03	JLS

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers:
- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Ecology and Environment, Inc.

Sample ID:	3991327016	**Matrix:**	Solid
Client Sample ID:	SB-05	**Location:**	Former tank loc 2'-0
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	17	mg/Kg	0.9	SW846-6010	8/17/99 15:58	8/18/99 13:42	JAC
Barium	110	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 13:42	JAC
Cadmium	12	mg/Kg	0.09	SW846-6010	8/17/99 15:58	8/18/99 13:42	JAC
Chromium	67	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:42	JAC
Lead	5200 D	mg/Kg	2	SW846-6010	8/17/99 15:58	8/19/99 17:41	JAC
Mercury	0.13	mg/Kg	0.022	SW846-7471	8/19/99 15:52	8/19/99 9:08	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 13:42	JAC
Silver	7.0	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 13:42	JAC
PHYSICAL PROPERTY ANALYSIS							
Tc olids	87.6	%		SM18 2540G		8/18/99 11:18	JL
GC/MS VOLATILE ORGANIC							
1,1,1-Trichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
1,1,2,2-Tetrachloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
1,1,2-Trichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
1,1-Dichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
1,1-Dichloroethylene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
1,2-Dichloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
1,2-Dichloropropane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
2-Butanone (M E K)	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
2-Hexanone	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Acetone	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Benzene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Bromodichloromethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Bromoform	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Bromomethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Carbon disulfide	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Carbon tetrachloride	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Chlorobenzene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Chloroethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327016	**Matrix:**	Solid
Client Sample ID:	SB-05	**Location:**	Former tank loc 2'-0
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS VOLATILE ORGANIC							
Chloroform	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Chloromethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
cis-1,2-Dichloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
cis-1,3-Dichloropropene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Dibromochloromethane	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Ethylbenzene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Methylene chloride	ND	ug/kg	290	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
o-Xylene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
P & M -Xylene	ND	ug/kg	58	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Styrene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Tetrachloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Toluene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
trans-1,2-Dichloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
trans-1,3-Dichloropropene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Trichloroethene	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
Vinyl chloride	ND	ug/kg	29	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 19:41	JDS
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
1,2,4-Trichlorobenzene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
1,2-Dichlorobenzene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
1,3-Dichlorobenzene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
1,4-Dichlorobenzene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,4,5-Trichlorophenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,4,6-Trichlorophenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,4-Dichlorophenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,4-Dimethylphenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,4-Dinitrophenol	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,4-Dinitrotoluene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2,6-Dinitrotoluene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2-Chloronaphthalene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2-Chlorophenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2-Methyl naphthalene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2-Methyl-4,6-dinitrophenol	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327016	**Matrix:**	Solid
Client Sample ID:	SB-05	**Location:**	Former tank loc 2'-0
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
2-Methylphenol (o-Cresol)	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2-Nitroaniline	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
2-Nitrophenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
3&4-Methylphenol (p&m-Cresol)	ND D	ug/kg	23000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
3,3-Dichlorobenzidine	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
3-Nitroaniline	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
4-Bromophenyl-phenylether	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
4-Chloro-3-methylphenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
4-Chloroaniline	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
4-Chlorophenyl-phenylether	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
4-Nitroaniline	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
4[illegible]ophenol	ND D	ug/kg	46000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Acenaphthene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Acenaphthylene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Anthracene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Benzo(a)anthracene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Benzo[a]pyrene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Benzo[b]fluoranthene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Benzo[g,h,i]perylene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Benzo[k]fluoranthene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Bis(2-Chloroethoxy)methane	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Bis(2-Chloroethyl)ether	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
bis(2-chloroisopropyl)ether	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
bis(2-Ethylhexyl)phthalate	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Butylbenzylphthalate	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Carbazole	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Chrysene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Di-n-butylphthalate	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
di-n-Octylphthalate	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Dibenzo[a,h]anthracene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Dibenzofuran	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Diethylphthalate	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Dimethylphthalate	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Ecology and Environment, Inc.

Sample ID:	3991327016	**Matrix:**	Solid
Client Sample ID:	SB-05	**Location:**	Former tank loc 2'-0
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:34:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
Fluoranthene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Fluorene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Hexachlorobenzene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Hexachlorobutadiene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Hexachlorocyclopentadiene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Hexachloroethane	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Indeno[1,2,3-c,d] pyrene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Isophorone	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
N-Nitroso-di-n-propylamine	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
N-Nitrosodiphenylamine	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Naphthalene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
N[illegible]enzene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Pentachlorophenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Phenanthrene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Phenol	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS
Pyrene	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:01	JLS

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327017	**Matrix:**	Solid
Client Sample ID:	SB-06	**Location:**	SS-07 loc 4'-0"
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/14/99 8:34:17AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TOTAL METALS ANALYSIS							
Arsenic	27	mg/Kg	0.8	SW846-6010	8/17/99 15:58	8/18/99 14:44	JAC
Barium	220	mg/Kg	0.4	SW846-6010	8/17/99 15:58	8/18/99 14:44	JAC
Cadmium	9.8	mg/Kg	0.08	SW846-6010	8/17/99 15:58	8/18/99 14:44	JAC
Chromium	18	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 14:44	JAC
Lead	2900 D	mg/Kg	0.8	SW846-6010	8/17/99 15:58	8/19/99 17:45	JAC
Mercury	2.3 D	mg/Kg	0.49	SW846-7471	8/19/99 15:52	8/19/99 9:09	SM
Selenium	ND	mg/Kg	2	SW846-6010	8/17/99 15:58	8/18/99 14:44	JAC
Silver	3.1	mg/Kg	0.04	SW846-6010	8/17/99 15:58	8/18/99 14:44	JAC
PHYSICAL PROPERTY ANALYSIS							
Total Solids	81.5	%		SM18 2540G		8/18/99 11:18	JL
GC/MS VOLATILE ORGANIC							
1,1,1-Trichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
1,1,2,2-Tetrachloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
1,1,2-Trichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
1,1-Dichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
1,1-Dichloroethylene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
1,2-Dichloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
1,2-Dichloropropane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
2-Butanone (M E K)	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
2-Hexanone	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
4-Methyl-2-pentanone (MIBK)	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Acetone	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Benzene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Bromodichloromethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Bromoform	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Bromomethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Carbon disulfide	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Carbon tetrachloride	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Chlorobenzene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Chloroethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Ecology and Environment, Inc.

Sample ID:	3991327017	**Matrix:**	Solid
Client Sample ID:	SB-06	**Location:**	SS-07 loc 4'-0"
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/14/99 8:34:17AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS VOLATILE ORGANIC							
Chloroform	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Chloromethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
cis-1,2-Dichloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
cis-1,3-Dichloropropene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Dibromochloromethane	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Ethylbenzene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Methylene chloride	ND	ug/kg	300	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
o-Xylene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
P & M -Xylene	ND	ug/kg	59	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Styrene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Tetrachloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
T[illegible]e	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
trans-1,2-Dichloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
trans-1,3-Dichloropropene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Trichloroethene	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
Vinyl chloride	ND	ug/kg	30	SW846-8260 Methanol Pr	8/12/99 10:40	8/17/99 20:22	JDS
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
1,2,4-Trichlorobenzene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
1,2-Dichlorobenzene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
1,3-Dichlorobenzene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
1,4-Dichlorobenzene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,4,5-Trichlorophenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,4,6-Trichlorophenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,4-Dichlorophenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,4-Dimethylphenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,4-Dinitrophenol	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,4-Dinitrotoluene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2,6-Dinitrotoluene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2-Chloronaphthalene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2-Chlorophenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2-Methyl naphthalene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2-Methyl-4,6-dinitrophenol	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327017	**Matrix:**	Solid
Client Sample ID:	SB-06	**Location:**	SS-07 loc 4'-0"
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/14/99 8:34:17AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
2-Methylphenol (o-Cresol)	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2-Nitroaniline	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
2-Nitrophenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
3&4-Methylphenol (p&m-Cresol)	ND D	ug/kg	12000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
3,3-Dichlorobenzidine	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
3-Nitroaniline	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
4-Bromophenyl-phenylether	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
4-Chloro-3-methylphenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
4-Chloroaniline	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
4-Chlorophenyl-phenylether	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
4-Nitroaniline	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
4-[illegible]ophenol	ND D	ug/kg	25000	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Acenaphthene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Acenaphthylene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Anthracene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Benzo(a)anthracene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Benzo[a]pyrene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Benzo[b]fluoranthene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Benzo[g,h,i]perylene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Benzo[k]fluoranthene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Bis(2-Chloroethoxy)methane	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Bis(2-Chloroethyl)ether	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
bis(2-chloroisopropyl)ether	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
bis(2-Ethylhexyl)phthalate	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Butylbenzylphthalate	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Carbazole	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Chrysene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Di-n-butylphthalate	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
di-n-Octylphthalate	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Dibenzo[a,h]anthracene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Dibenzofuran	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Diethylphthalate	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Dimethylphthalate	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327017	**Matrix:**	Solid
Client Sample ID:	SB-06	**Location:**	SS-07 loc 4'-0"
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/14/99 8:34:17AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
GC/MS SEMIVOLATILE ORGANIC ANALYSIS							
Fluoranthene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Fluorene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Hexachlorobenzene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Hexachlorobutadiene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Hexachlorocyclopentadiene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Hexachloroethane	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Indeno[1,2,3-c,d] pyrene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Isophorone	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
N-Nitroso-di-n-propylamine	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
N-Nitrosodiphenylamine	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Naphthalene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Nitrobenzene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Pentachlorophenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Phenanthrene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Phenol	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS
Pyrene	ND D	ug/kg	6300	SW846-8270	8/15/99 18:01	8/19/99 12:46	JLS

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327018	**Matrix:**	Solid
Client Sample ID:	SS-01 - TCLP	**Location:**	
Collected:	8/11/99 12:45:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC
Barium	0.35	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC
Cadmium	0.34	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC
Lead	27	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:56	SM
Selenium	0.059	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:35	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327019	**Matrix:**	Solid
Client Sample ID:	SS-02 - TCLP	**Location:**	
Collected:	8/11/99 12:57:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC
Barium	0.48	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC
Cadmium	0.20	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC
Lead	6.4	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:56	SM
Selenium	0.041	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:40	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327020	**Matrix:**	Solid
Client Sample ID:	SS-03 - TCLP	**Location:**	
Collected:	8/11/99 1:10:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC
Barium	0.23	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC
Cadmium	0.83	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC
Lead	4.2	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:57	SM
Selenium	0.064	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:45	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327021	**Matrix:**	Solid
Client Sample ID:	SS-04 - TCLP	**Location:**	
Collected:	8/11/99 1:25:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC
Barium	0.28	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC
Cadmium	0.12	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC
Lead	5.8	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:57	SM
Selenium	0.020	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:50	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327022	**Matrix:**	Solid
Client Sample ID:	SS-05 - TCLP	**Location:**	
Collected:	8/11/99 1:30:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC
Barium	0.59	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC
Cadmium	0.23	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC
Lead	11	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:57	SM
Selenium	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:55	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327023	**Matrix:**	Solid
Client Sample ID:	SS-06 - TCLP	**Location:**	
Collected:	8/11/99 1:45:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC
Barium	0.29	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC
Cadmium	0.28	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC
Lead	7.0	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:58	SM
Selenium	0.048	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:31	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327024	**Matrix:**	Solid
Client Sample ID:	SS-07 - TCLP	**Location:**	
Collected:	8/11/99 2:05:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC
Barium	0.31	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC
Cadmium	0.14	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC
Lead	11	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 16:57	SM
Selenium	0.056	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:36	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Quantifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327025	**Matrix:**	Solid
Client Sample ID:	SS-08 - TCLP	**Location:**	
Collected:	8/11/99 2:15:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC
Barium	0.76	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC
Cadmium	0.16	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC
Lead	12	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:01	SM
Selenium	0.041	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:41	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327026	**Matrix:**	Solid
Client Sample ID:	SS-09 - TCLP	**Location:**	
Collected:	8/11/99 2:25:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC
Barium	0.73	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC
Cadmium	0.022	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC
Lead	0.35	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:01	SM
Selenium	0.039	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:46	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327027	**Matrix:**	Solid
Client Sample ID:	SS-10 - TCLP	**Location:**	
Collected:	8/11/99 2:35:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC
Barium	0.98	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC
Cadmium	0.012	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC
Lead	0.26	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:02	SM
Selenium	0.032	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:51	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327028	**Matrix:**	Solid
Client Sample ID:	SS-11 - TCLP	**Location:**	
Collected:	8/12/99 3:10:00PM	**Project:**	9906-808
Received:	8/13/99 8:42:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	0.033 M	mg/L	~~0.02~~ 0.033	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:17	JAC
Barium	1.1	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:17	JAC
Cadmium	0.15	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:17	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:17	JAC
Lead	52 D	mg/L	0.1	SW846 6010 TCLP	8/17/99 15:32	8/19/99 23:03	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:02	SM
Selenium	0.042	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:17	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 13:17	JAC

UMMCA 9/20/99

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327029	**Matrix:**	Solid
Client Sample ID:	SB-01 - TCLP	**Location:**	
Collected:	8/12/99 8:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:47:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC
Barium	1.4	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC
Cadmium	0.028	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC
Lead	0.50	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:03	SM
Selenium	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 14:56	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Ecology and Environment, Inc.

Sample ID:	3991327030	**Matrix:**	Solid
Client Sample ID:	SB-02 - TCLP	**Location:**	
Collected:	8/12/99 8:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:47:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC
Barium	0.63	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC
Cadmium	0.36	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC
Lead	13	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:03	SM
Selenium	0.032	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:01	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327031	**Matrix:**	Solid
Client Sample ID:	SB-03 - TCLP	**Location:**	
Collected:	8/12/99 9:00:00AM	**Project:**	9906-808
Received:	8/13/99 8:47:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:05	JAC
Barium	1.0	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:05	JAC
Cadmium	1.5	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:05	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:05	JAC
Lead	35 D	mg/L	0.04	SW846 6010 TCLP	8/17/99 15:32	8/19/99 23:08	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:03	SM
Selenium	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:05	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:05	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

Ecology and Environment, Inc.

Sample ID:	3991327032	**Matrix:**	Solid
Client Sample ID:	SB-04 - TCLP	**Location:**	
Collected:	8/12/99 9:35:00AM	**Project:**	9906-808
Received:	8/13/99 8:47:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC
Barium	0.34	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC
Cadmium	0.029	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC
Lead	14	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:04	SM
Selenium	0.038	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:10	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

ND Not detected
B Blank contaminant
D Dilution
J Estimated result
M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327033	**Matrix:**	Solid
Client Sample ID:	SB-05 - TCLP	**Location:**	
Collected:	8/12/99 10:15:00AM	**Project:**	9906-808
Received:	8/13/99 8:47:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311			MMM 9/20/99				
Arsenic	0.021	mg/L	~~0.02~~ 0.021 mme	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:15	JAC
Barium	0.66	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:15	JAC
Cadmium	0.24	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:15	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:15	JAC
Lead	59	mg/L	0.1	SW846 6010 TCLP	8/17/99 15:32	8/19/99 23:13	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:04	SM
Selenium	0.063	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:15	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:15	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D *Dilution*
- J Estimated result
- M Matrix interference

CT&E Environmental Services Inc.

Ecology and Environment, Inc.

Sample ID:	3991327034	**Matrix:**	Solid
Client Sample ID:	SB-06 - TCLP	**Location:**	
Collected:	8/12/99 10:40:00AM	**Project:**	9906-808
Received:	8/13/99 8:47:00AM	**Sampled By:**	TEF

Test Description	Result	Unit	Reporting Detection Limit	Method	Prepared	Analyzed	Analyst
TCLP METAL ANALYSIS SW-846 Method 1311							
Arsenic	ND	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC
Barium	0.79	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC
Cadmium	0.18	mg/L	0.005	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC
Chromium	ND	mg/L	0.05	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC
Lead	17	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC
Mercury	ND	mg/L	0.0002	SW846 7470 TCLP	8/17/99 16:36	8/18/99 17:05	SM
Selenium	0.025	mg/L	0.02	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC
Silver	ND	mg/L	0.01	SW846 6010 TCLP	8/17/99 15:32	8/19/99 15:52	JAC

Respectfully submitted,
CT&E Environmental Services, Inc.

Project Manager, Michigan Division

Reported: 8/20/1999

Qualifiers

Certification Numbers: WI #999959180; MI #0021; AK UST #048; ND R-081; MD #266; IN C-MI-01

- ND Not detected
- B Blank contaminant
- D Dilution
- J Estimated result
- M Matrix interference